

FEATURES

Security & Access Control

- Dual authentication support (PIN + Server validation)
- Tamper detection and lock status feedback
- Time-based access restrictions (scheduling, delay opening)
- Offline mode for network loss scenarios
- Stored firmware and configuration data are AES-256 encrypted

Smart Control & Intelligence

- High-performance microcontroller
- Real-time lock monitoring with feedback switch (open/closed status)
- Millisecond-precise state machine (FSM) based logic handling

User & Data Interface

- Ethernet with POE
- Keypad and OLED display integration
- Server sync via HTTP API with failover handling
- One-Time-Code (OTC) support for temporary access
- Multi-language menu system (FSM controlled)
- Configurable buzzer and mute
- Status bar with ambient temperature/battery/network/server indicators

Power & Data Management

- FRAM-based parameter storage
- Power-fail safe configuration restoration
- 2000 mAh backup power battery for mains power failure
- Automatic power source switching (USB TypeC / battery / PoE)
- Low battery warning via display and buzzer
- Smart power optimization with sleep handling (configurable)

Hardware Architecture & Compliance

- Industrial operating temperature support (-40°C to +80°C)
- Optimized thermal layout for continuous operation
- Full ESD protection on all external interfaces
- Designed with EMC shielding considerations



